

Agathidiini from China, with description of 14 new species (Coleoptera, Leiodidae)

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Agathidiini from China, with description of 14 new species (Coleoptera, Leiodidae). - Records and/or descriptions are given for 18 species of Agathidiini from China, deposited in the Geneva Museum. New species are: *Agathidium (Neoceble) sichuanicum* n.sp. (Sichuan), *A. (A.) vagum* n.sp. (Guangxi), *A. (A.) occultum* n.sp. (Yunnan), *A. (A.) gonggaense* n.sp. (Sichuan), *A. (A.) rufescens* n.sp. (Sichuan), *A. (A.) procerum* n.sp. (Sichuan), *A. (A.) celatum* n.sp. (Hubei), *A. (A.) huaense* n.sp. (Shaanxi), *A. (A.) brunneipenne* n.sp. (Hubei), *A. (A.) inerme* n.sp. (Hubei), *A. (A.) lugubre* n.sp. (Guangxi), *A. (A.) indubium* n.sp. (Sichuan), *A. (Microceble) corticinum* n.sp. (Yunnan), *A. (Microceble) solutum* n.sp. (Guangxi). New records for China are: *A. (Microceble) venustum* Ang. & Dmz. (Guangxi), *A. (Microceble) manasicum* Ang. & Dmz. (Guangxi).

Key-words: Leiodidae - Agathidiini - China - new species - new records.

INTRODUCTION

A large amount of new data on the Agathidiini fauna of China results from a study of the following material deposited in the Geneva Museum:

- 16 species (87 specimens), from 5 localities in Sichuan, Guangxi, Hubei, Shaanxi and Yunnan, leg. S. Kurbatov;

- 2 species (8 specimens), from 1 locality in Sichuan, leg. A. Smetana.

The new data concern:

- 14 new species: *Agathidium (Neoceble) sichuanicum* n.sp. (Sichuan), *A. (A.) vagum* n.sp. (Guangxi), *A. (A.) occultum* n.sp. (Yunnan), *A. (A.) gonggaense* n.sp. (Sichuan), *A. (A.) rufescens* n.sp. (Sichuan), *A. (A.) procerum* n.sp. (Sichuan), *A. (A.) celatum* n.sp. (Hubei), *A. (A.) huaense* n.sp. (Shaanxi), *A. (A.) brunneipenne* n.sp. (Hubei), *A. (A.) inerme* n.sp. (Hubei), *A. (A.) lugubre* n.sp. (Guangxi), *A. (A.) indubium* n.sp. (Sichuan), *A. (Microceble) corticinum* n.sp. (Yunnan), *A. (Microceble) solutum* n.sp. (Guangxi).

- 2 new records for China: *Agathidium (Microceble) venustum* Ang. & Dmz. (Guangxi), *A. (Microceble) manasicum* Ang. & Dmz. (Guangxi).

The specimens are now deposited either in the Geneva Museum (MHNG) or in Angelini's collection (AC).

We are indebted to Dr. Ivan Löbl for making the material available for study and comments on the earlier version of the manuscript.

Anisotoma Panzer, 1797

Anisotoma becvari Ang. & Švec

Anisotoma becvari Angelini & Švec, 1994: 5.

M a t e r i a l : China, West Hubei, Shennongjia Nat. Res., 2000-2200 m, 3-8.VI.1995, leg. S. Kurbatov, 2 exx. (MHNG), 1 ex. (AC).

DISTRIBUTION: China (Yunnan and Hubei). New record for Hubei.

Agathidium Panzer, 1797

Subg. **Neoceble** Gozis, 1886

marginatum group

Agathidium (Neoceble) sichuanicum n.sp.

Figs 1-5

Length 2.7-3.1 mm (holotype ♂: 2.95 mm). Dorsum reddish-brown; venter reddish-brown, mesosternum lighter; antennae uniformly testaceous; legs reddish-brown. Microreticulation superficial on entire dorsum; puncturation fine and sparse on head and pronotum, absent from elytra. Sutural striae absent.

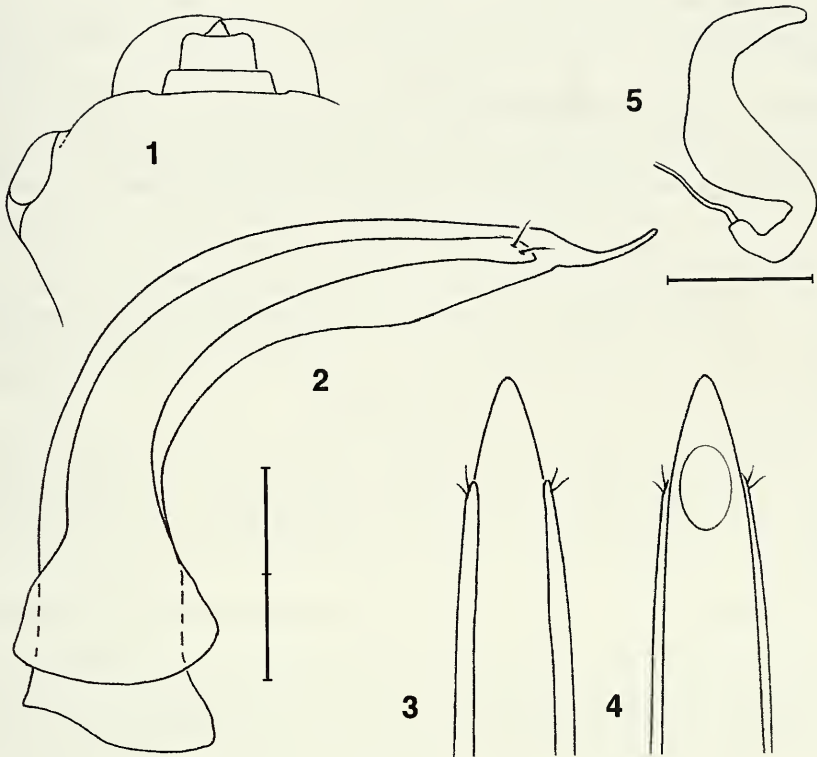
Head: Widest just behind eyes: temple 1/4 as long as the eye; anterior-lateral margins not raised; clypeus slightly emarginate; clypeal line very superficial; eyes prominent (fig. 1). Antennal segment 3 1.3 times as long as 2 and longer than 4 and 5 combined. Hamann's organ: gutter with 1 vesicle in 9th and 10th antennal segments. Microreticulation very superficial; punctures very small, superficial, separated from each other by 1-6 times their diameter; some extremely small punctures interposed.

Pronotum: 1.45 times as broad as head, moderately broader than long (W/L = 1.7), moderately convex (W/H = 1.61); anterior margin sharply curved; lateral outline broadly rounded. Microreticulation more distinct than on head, uniform; punctures as large as those on head, sparser, separated from each other by 5-15 times their diameter. Holotype: length 0.85 mm, width 1.45 mm, height 0.90 mm.

Elytra: Moderately narrower than pronotum, nearly as long as broad (W/L = 0.96), moderately convex (W/H = 1.77); lateral outline with sharp humeral angle. Microreticulation very superficial; puncturation absent, except for some very small and poorly distinct punctures. Holotype: length 1.40 mm, width 1.35 mm, height 0.76 mm.

Metathoracic wings absent. Meso- and metasternum: median carina weak, lateral lines complete, femoral lines absent.

Legs. Tarsal formula: ♂ 5-5-4, ♀ 4-4-4.



FIGS 1-5

Head, male copulatory organ (lateral view, dorsal and ventral view of apex) and spermatheca of *Agathidium sichuanicum* n.sp. Scale: 1 division = 0.1 mm.

Male copulatory organ (figs 2-4): Aedeagus comparatively stout, with proximal part simple and lateral margins gently converging towards a rounded tip. Ventral piece absent. Parameres slender, slightly enlarged at apex.

Spermatheca (fig. 5): S-shaped, enlarged at mid-length.

HOLOTYPE ♂: China, Sichuan, Wolong Nat. Res., 1700 m, 17.V.1994, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 3 ♀ (MHNG), 1 ♂ and 1 ♀ (AC).

Discussion: *Agathidium sichuanicum* n.sp. is the only Chinese species of the *marginatum* group; therefore, it is easy to distinguish from the other species of the subg. *Neoceble*, as it lacks sutural striae and exhibits microreticulate dorsum.

Distribution: China (Sichuan).

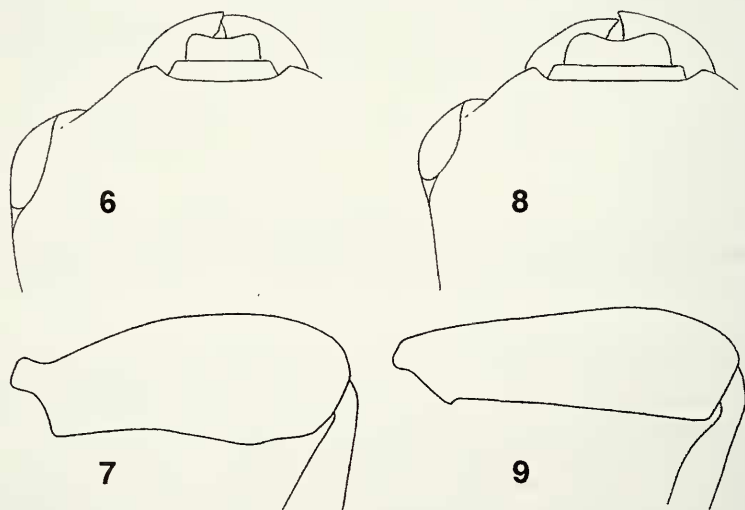
Subg. *Agathidium* Panzer, 1797*madurense* group*Agathidium (Agathidium) vagum* n.sp.

Figs 6, 7, 10-12

Length 3.4 mm (holotype ♂ and paratype). Dorsum reddish-brown; venter reddish-brown, mesosternum lighter; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent from entire dorsum; puncturation fine and sparse on head and pronotum, absent from elytra. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins distinctly raised; clypeus slightly emarginate; clypeal line absent; eyes prominent (fig. 6). Antennal segment 3 1.4 times as long as 2 and as long as 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Punctures small, superficial, separated from each other by 2-8 times their diameter.

Pronotum: 1.6 times as broad as head, moderately broader than long ($W/L = 1.45$), very convex ($W/H = 1.45$); anterior margin sharply curved; lateral outline broadly rounded. Punctures as large as those on head, sparser, separated from each other by 8-15 times their diameter. Holotype: length 1.10 mm, width 1.40 mm, height 1.10 mm.



FIGS 6-9

Head and male metafemora of: 6-7, *Agathidium vagum* n.sp.; 8-9, *A. occultum* n.sp.

Elytra: Slightly narrower than pronotum, slightly longer than broad ($W/L = 0.96$), moderately convex ($W/H = 1.82$); lateral outline with very weak humeral angle. Punctuation almost absent: only some very small, sparse punctures present. Holotype: length 1.55 mm, width 1.50 mm, height 0.82 mm.

Metathoracic wings present. Meso- and metasternum: median carina sharp, lateral lines absent, femoral lines incomplete; a small tubercle between the metacoxae.

Legs: Male hind femora broadened distally (fig. 7). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 10-12): Aedeagus slender, with hook-like proximal part, lateral margins sinuate and converging towards a subacute tip, deeply bifid ventral piece. Parameres slender, gently narrowing towards apex.

HOLOTYPE ♂: China, Guangxi, 15 Km North Longsheng, 1000 m, 15-22.VI.95, leg. S. Kurbatov (MHNG).

PARATYPE: as holotype but 20.VI.95, 1 ♂ (AC).

Discussion: *Agathidium vagum* n.sp. is closely related to *A. occultum* n.sp. and *A. becvari* Ang. & Švec, from which it differs in the colour of the antennae, the ratio of the 3rd/2nd antennal segment and the shape of the male hind femora.

Distribution: China (Guangxi).

Agathidium (Agathidium) occultum n.sp.

Figs 8, 9, 13-16

Length 3.0-3.2 mm (holotype ♂: 3.1 mm). Dorsum reddish-brown; venter reddish-brown, mesosternum lighter; antennae darker at segments 9-10; legs reddish-brown. Microreticulation almost absent, traceable on elytra; punctuation fine and sparse on entire dorsum. Sutural striae absent.

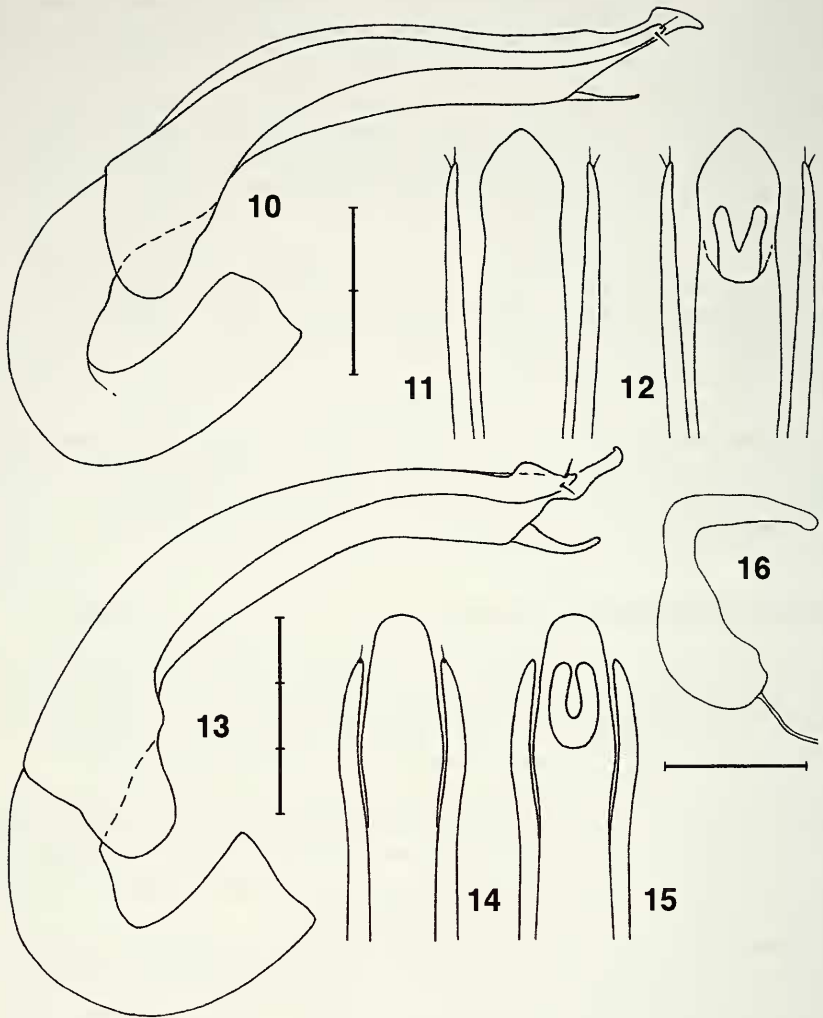
Head: Widest at eyes; anterior-lateral margins distinctly raised; clypeus slightly emarginate; clypeal line absent; eyes prominent (fig. 8). Antennal segment 3 1.7 times as long as 2 and as long as 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Punctures small, superficial, separated from each other by 1-6 times their diameter.

Pronotum: 1.57 times as broad as head, moderately broader than long ($W/L = 1.5$), moderately convex ($W/H = 1.65$); anterior margin slightly curved; lateral outline broadly rounded. Punctures larger and more distinctly impressed than on head, separated from each other by 4-6 times their diameter. Holotype: length 1.10 mm, width 1.65 mm, height 1.00 mm.

Elytra: Moderately narrower than pronotum, slightly broader than long ($W/L = 1.1$), slightly convex ($W/H = 1.93$); lateral outline with very weak humeral angle. Microreticulation almost absent, only traceable; punctures smaller and less well impressed than on head, separated from each other by 4-15 times their diameter. Holotype: length 1.40 mm, width 1.55 mm, height 0.80 mm.

Metathoracic wings present. Meso- and metasternum: median carina sharp, lateral lines absent, femoral lines incomplete; a small tubercle between the metacoxae.

Legs: Male hind femora broadened distally (fig. 9). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.



FIGS 10-16

Male copulatory organ (lateral view, dorsal and ventral view of apex) of: 10-12, *Agathidium vagum* n.sp.; 13-15, *A. occultum* n.sp. Spermatheca of: 16, *A. occultum* n.sp. Scale: 1 division = 0.1 mm.

Male copulatory organ (figs 13-15): Aedeagus slender, with hook-like proximal part, lateral margins sinuate and converging towards a largely rounded apex, deeply bifid ventral piece. Parameres slender, abruptly enlarged at apex.

Spermatheca (fig. 16): Basal part pear-shaped; apical part short.

HOLOTYPE ♂: China, South Yunnan, Mengyang Nat. Res., 9.IX.94, 500 m, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 2 ♀ (MHNG), 1 ♀ (AC); as holotype but 8.IX.94, 1 ♂ (AC).

Discussion: See under *A. vagum* n.sp.

Distribution: China (South Yunnan).

seminulum group

Agathidium (Agathidium) uliginosum Ang. & Švec

Agathidium (s.str.) uliginosum Angelini & Švec, 1994: 17.

M a t e r i a l: China, Sichuan, Gongga Shan, above Camp 3, 3050 m, 22.VII.94, leg. A. Smetana, 3 exx. (MHNG), 2 exx. (AC).

Distribution: China (Yunnan and Sichuan).

laevigatum group

***Agathidium (Agathidium) gonggaense* n.sp.**

Figs 17, 18, 25-27

Length 4.2-4.6 mm (holotype ♂: 4.5 mm). Dorsum black; venter reddish-brown, mesosternum lighter; antennae uniformly testaceous; legs reddish-brown. Entire dorsum with superficial microreticulation and very small punctures. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins not raised; clypeus moderately emarginate; clypeal line absent; eyes flattened (fig. 17). Antennal segment 3 2.1 times as long as 2 and longer than 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Microreticulation superficial, uniform; punctures very small, superficial, hardly evident, separated from each other by 3-10 times their diameter.

Pronotum: 1.4 times as broad as head, slightly broader than long ($W/L = 1.35$), very convex ($W/H = 1.45$); anterior margin sharply curved; lateral outline broadly rounded. Microreticulation less well impressed than on head; punctures as large as those on head, separated from each other by 5-6 times their diameter. Holotype: length 1.55 mm, width 2.10 mm, height 1.45 mm.

Elytra: Slightly narrower than pronotum, as broad as long, slightly convex ($W/H = 1.9$); lateral outline with very weak humeral angle. Microreticulation more distinctly impressed than on pronotum; punctures as large as those on head, separated from each other by 10-15 times their diameter. Holotype: length 2.00 mm, width 2.00 mm, height 1.05 mm.

Metathoracic wings absent. Meso- and metasternum: median carina sharp, lateral lines absent, femoral lines complete; a small tubercle between the metacoxae.

Legs: Male hind femora with pronounced tooth at posterior margin (fig. 18). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 25-27): Aedeagus slender, with hook-like proximal part, lateral margins sinuate, apex emarginate, ventral piece spatula-like. Parameres slender, gently narrowing toward apex and curved down.

HOLOTYPE ♂: China, Sichuan, Gongga Shan, above Camp 3, 3050 m, 22.VII.94, leg. A. Smetana (MHNG).

PARATYPES: China, Sichuan, Gongga Shan, Lake above Camp 2, 2750 m, 24.VII.94, leg. A. Smetana, 1 ♂ (MHNG), 1 ♂ (AC).

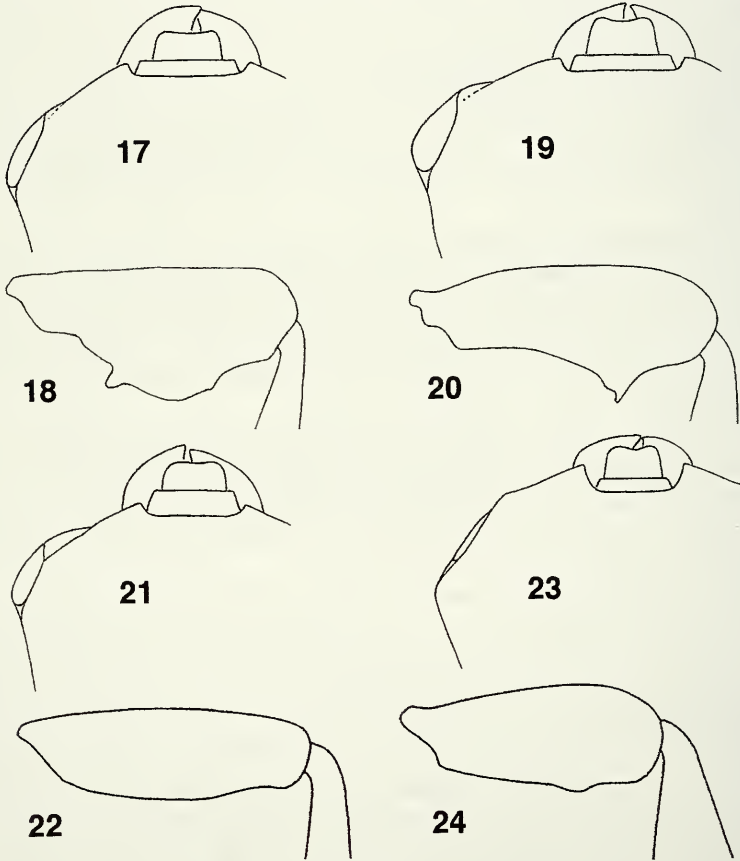
Discussion: Within the Chinese species of the *laevigatum* group, *A. gonggaense* n.sp. shares its large size only with *A. rufescens* n.sp.; it differs from the latter in the ratio of the 3rd/2nd antennal segment and the presence of microreticulation on the entire dorsum.

Distribution: China (Sichuan).

Agathidium (Agathidium) rufescens n.sp.

Figs 19, 20, 28-31

Length 3.6-3.9 mm (holotype ♂: 3.8 mm). Dorsum reddish-brown, venter reddish-brown, mesosternum lighter; antennae uniformly testaceous; legs reddish-



FIGS 17-24

Head and male metafemora of: 17-18, *Agathidium gonggaense* n.sp.; 19-20, *A. rufescens* n.sp.; 21-22, *A. procerum* n.sp.; 23-24, *A. celatum* n.sp.

brown. Microreticulation absent from head and pronotum, superficial on elytra; puncturation fine and sparse on entire dorsum. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins not raised; clypeus moderately emarginate; clypeal line absent; eyes flattened (fig. 19). Antennal segment 3 2.3 times as long as 2 and longer than 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Microreticulation absent; punctures small but clearly impressed, separated from each other by 3-4 times their diameter.

Pronotum: 1.26 times as broad as head, slightly broader than long ($W/L = 1.17$), very convex ($W/H = 1.37$); anterior margin sharply curved; lateral outline broadly rounded. Microreticulation absent; punctures smaller and less well impressed than on head, separated from each other by 1-6 times their diameter. Holotype: length 1.40 mm, width 1.65 mm, height 1.20 mm.

Elytra: As broad as pronotum, as broad as long, slightly convex ($W/H = 2.05$); lateral outline with very weak humeral angle. Microreticulation slightly impressed, difficult to see, more distinct in the less coloured specimens; punctures as large those on head, sparser, separated from each other by 2-15 times their diameter. Holotype: length 1.60 mm, width 1.65 mm, height 0.80 mm.

Metathoracic wings absent. Meso- and metasternum: median carina absent, lateral lines weak and incomplete, femoral lines complete.

Legs: Male hind femora with pronounced tooth at posterior margin (fig. 20). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 28-30): Aedeagus slender, with proximal part simple, lateral margins sinuate, apex emarginate, ventral piece not bifid. Parameres slender, gently narrowing toward apex.

Spermatheca (fig. 31): S-shaped; enlarged at the duct connection.

HOLOTYPE ♂: China, Sichuan, Wolong Nat. Res., 900 m, 23.V.94, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 1 ♀ (MHNG), 1 ♂ (AC).

Discussion: See under *A. gonggaense* n.sp.

Distribution: China (Sichuan).

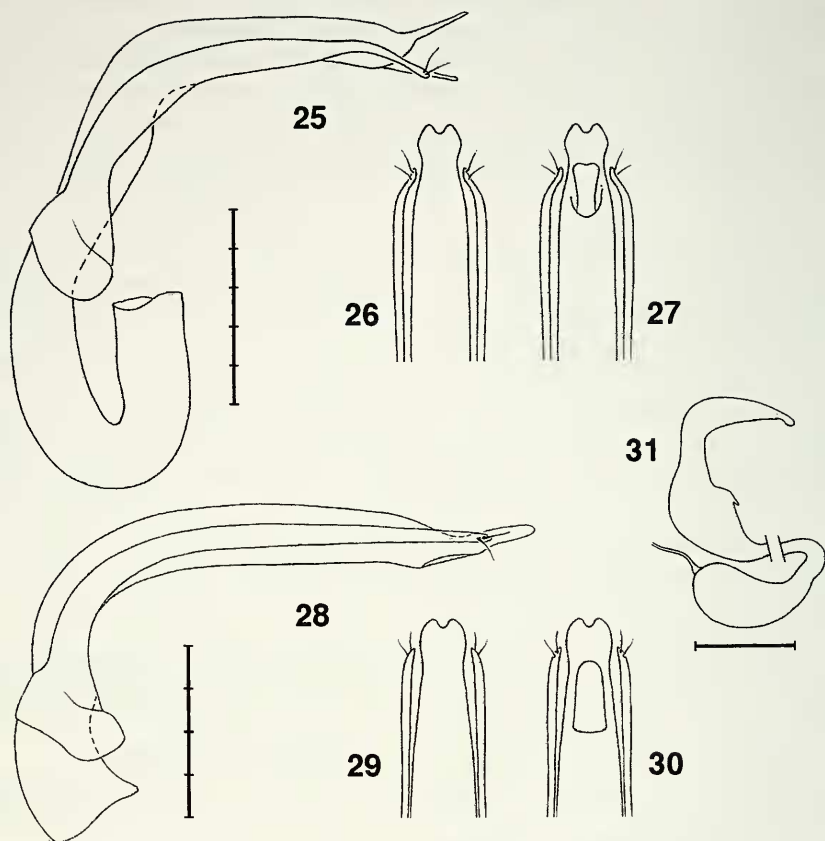
Agathidium (Agathidium) procerum n.sp.

Figs 21, 22, 32-35

Length 2.15-2.30 mm (holotype ♂: 2.25 mm). Dorsum reddish-brown; venter reddish-brown, mesosternum lighter; antennae uniformly testaceous; legs reddish-brown. Microreticulation superficial, uniform on entire dorsum; puncturation absent. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins not raised; clypeus moderately emarginate; clypeal line absent; eyes flattened (fig. 21). Antennal segment 3 1.1 times as long as 2 and shorter than 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Microreticulation uniform, very superficial.

Pronotum: 1.4 times as broad as head, moderately broader than long ($W/L = 1.57$), very convex ($W/H = 1.46$); anterior margin slightly curved; lateral outline



FIGS 25-31

Male copulatory organ (lateral view, dorsal and ventral view of apex) of: 25-27, *Agathidium gonggaense* n.sp.; 28-30, *A. rufescens* n.sp. Spermatheca of: 31, *A. rufescens* n.sp. Scale: 1 division = 0.1 mm.

broadly rounded. Microreticulation as that on head. Holotype: length 0.70 mm, width 1.10 mm, height 0.75 mm.

Elytra: As broad as pronotum, as broad as long, slightly convex ($W/H = 2$); lateral outline with very weak humeral angle. Microreticulation as that on head. Holotype: length 1.05 mm, width 1.10 mm, height 0.55 mm.

Metathoracic wings absent. Meso- and metasternum: median carina absent, lateral lines absent, femoral lines complete; a small tubercle between the metacoxae.

Legs: Male hind femora broadened distally (fig. 22). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 32-34): Aedeagus slender, with spiral proximal part, lateral margins abruptly converging toward subacute tip, deeply bifid ventral piece. Parameres slender, gently narrowing towards apex.

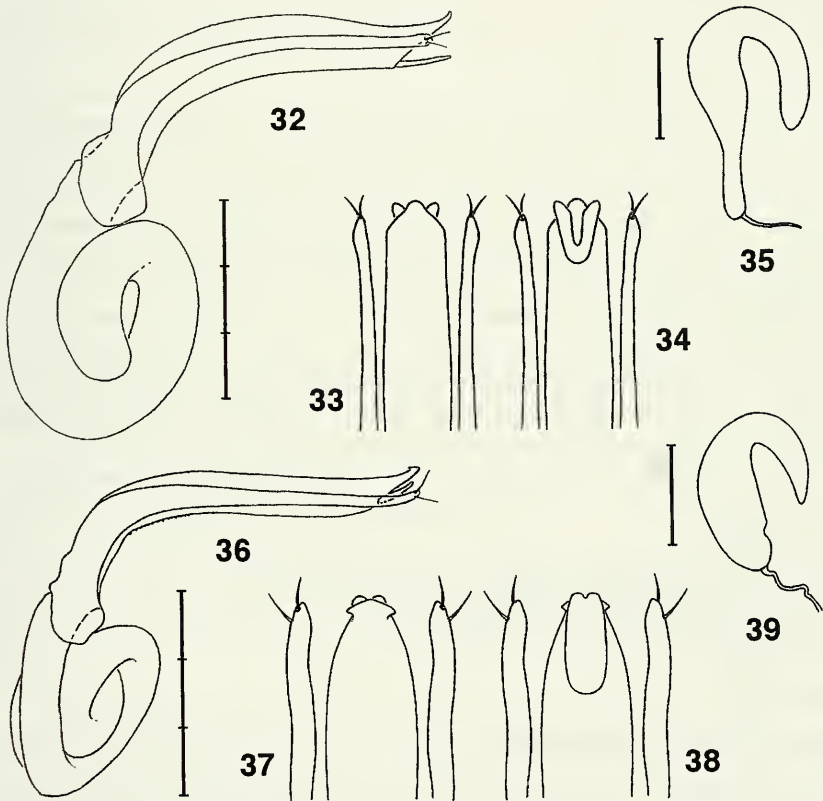
Spermatheca (fig. 35): Basal and apical parts very different in shape and length.

HOLOTYPE ♂: China, Sichuan, Wolong Nat. Res., 1500 m, 22.V.94, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype but 1700 m, 17.V.94, 1 ♂ (AC); same but 18.V.94, 1 ♀ (MHNG), 1 ♀ (AC); same but 900 m, 23.V.94, 1 ♂ and 2 ♀ (MHNG), 1 ♂ (AC).

Discussion: See under *A. gonggaense* n.sp. Within the *laevigatum* group, *A. procerum* n.sp. is closely related to *A. celatum* n.sp.; it differs from the latter in the head size, the ratio of the 3rd/2nd antennal segments, the ratio of the pronotum/head width and the tarsal formula in female.

Distribution: China (Sichuan).



FIGS 32-39

Male copulatory organ (lateral view, dorsal and ventral view of apex) and spermatheca of: 32-35, *Agathidium procerum* n.sp.; 36-39, *A. celatum* n.sp. Scale: 1 division = 0.1 mm.

Agathidium (Agathidium) celatum n.sp.

Figs 23, 24, 36-39

Length 2.2-2.3 mm (holotype ♂: 2.2 mm). Dorsum and venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation present only on elytra; puncturation fine and sparse on head and pronotum. Sutural striae absent.

Head: Widest just behind eyes; temple 1/2 as long as the eye; anterior-lateral margins not raised; clypeus deeply emarginate; clypeal line absent; eyes flattened, hardly distinct in dorsal view (fig. 23). Antennal segment 3 1.3 times as long as 2 and longer than 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Punctures very small, superficial, separated from each other by 1-8 times their diameter.

Pronotum: 1.2 times as broad as head, moderately broader than long (W/L = 1.5), moderately convex (W/H = 1.54); anterior margin sharply curved; lateral outline broadly rounded. Punctures larger and more distinctly impressed than on head, separated from each other by 2-6 times their diameter. Holotype: length 0.70 mm, width 1.05 mm, height 0.68 mm.

Elytra: Slightly narrower than pronotum, as broad as long, moderately convex (W/H = 1.58); lateral outline with very weak humeral angle. Microreticulation superficial, uniform; puncturation absent, except for some very small punctures. Holotype: length 0.95 mm, width 0.95 mm, height 0.60 mm.

Metathoracic wings absent. Meso- and metasternum: median carina weak, lateral lines absent, femoral lines complete; a small tubercle between the metacoxae. Metasternum very short.

Legs: Male hind femora broadened distally (fig. 24). Tarsal formula: ♂ 5-5-4, ♀ 4-4-4.

Male copulatory organ (figs 36-38): Aedeagus slender, with spiralled proximal part, lateral margins gently converging towards a arrow-like apex, ventral piece not bifid. Parameres slender, gently narrowing towards apex.

Spermatheca (fig. 39): Basal part pear-shaped; apical part short and tapered.

HOLOTYPE ♂: China, West Hubei, Shennongjia Nat. Res., 2000-2200 m, 7.VI.95, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 3-8.VI.95, 1 ♀ (MHNG), 1 ♀ (AC).

Discussion: See under *A. procerum* n.sp.

Distribution: China (West Hubei).

dentatum group**Agathidium (Agathidium) huaense** n.sp.

Figs 40, 45, 50-53

Length 2.9-3.1 mm (holotype ♂: 3.1 mm). Dorsum and venter reddish-brown; antennae uniformly testaceous; legs reddish-brown. Microreticulation almost absent, traceable on elytra; puncturation fine and sparse on entire dorsum. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins not raised; clypeus slightly emarginate; clypeal line absent; eyes flattened (fig. 40). Antennal segment 3 1.5 times

as long as 2 and longer than 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Punctures small, superficial, separated from each other by 4-6 times their diameter.

Pronotum: 1.27 times as broad as head, slightly broader than long ($W/L = 1.33$), moderately convex ($W/H = 1.55$); anterior margin slightly curved; lateral outline broadly rounded. Punctures smaller and more superficial than on head, separated from each other by 1-6 times their diameter. Holotype: length 1.05 mm, width 1.40 mm, height 0.90 mm.

Elytra: As broad as pronotum, as broad as long, slightly convex ($W/H = 2$); lateral outline with very weak humeral angle. Microreticulation almost absent, only traceable; punctures larger than on pronotum, very superficial, separated from each other by 3-10 times their diameter. Holotype: length 1.30 mm, width 1.40 mm, height 0.70 mm.

Metathoracic wings absent. Meso- and metasternum: median carina sharp, lateral lines absent, femoral lines incomplete.

Legs: Male hind femora with pronounced tooth at posterior margin (fig. 45). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 50-52): Aedeagus slender, with hook-like proximal part, lateral margins sinuate, apex truncate, ventral piece not bifid. Parameres slender, enlarged at apex.

Spermatheca (fig. 53): Basal part pear-shaped; apical part short and tapered.

HOLOTYPE ♂: China, Shaanxi, Mt. Hua, 500 m, 12.V.94, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 1 ♀ (MHNG), 1 ♂ and 1 ♀ (AC).

Discussion: *A. huaense* n.sp. is closely related to *A. fukiense* Ang. & Dmz. and *A. brunneipenne* n.sp.; it differs from *A. fukiense* in the colour of antennae and the lack of metathoracic wings; it differs from *A. brunneipenne* n.sp. in the ratio of the 3rd/2nd antennal segments, the shape of the male hind femora and the tarsal formula.

Distribution: China (Shaanxi).

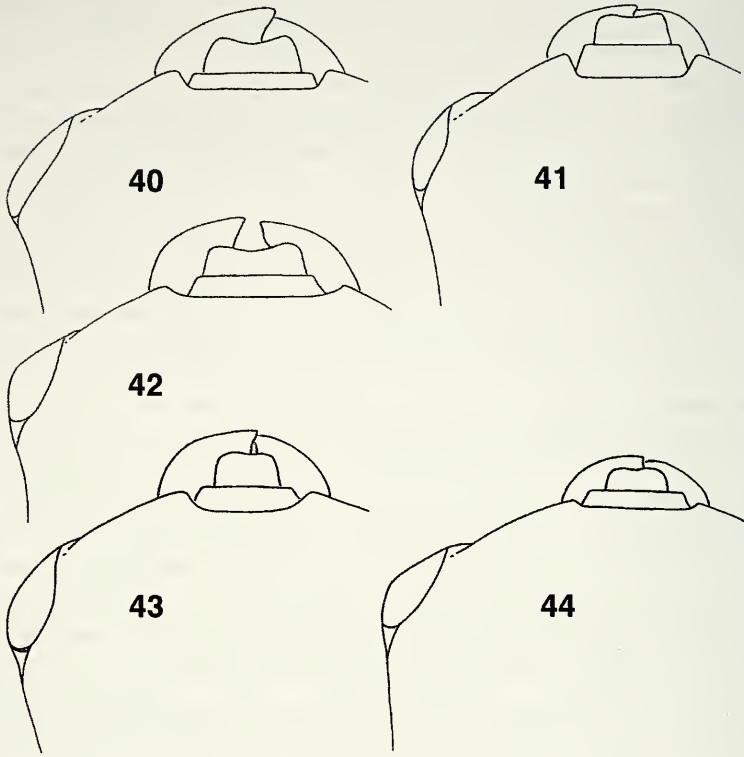
Agathidium (Agathidium) brunneipenne n.sp.

Figs 41, 46, 54-57

Length 2.7-3.0 mm (holotype ♂: 2.9 mm). Head and pronotum reddish-brown, elytra either black or reddish-brown; venter reddish-brown, mesosternum lighter; antennae uniformly testaceous; legs reddish-brown. Microreticulation almost absent, traceable on elytra; punctures very small and sparse on entire dorsum. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins not raised; clypeus deeply emarginate; clypeal line absent; eyes flattened (fig. 41). Antennal segment 3 1.1 times as long as 2 and shorter than 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Microreticulation absent; punctures small, superficial, hardly distinct, separated from each other by 4-10 times their diameter.

Pronotum: 1.39 times as broad as head, slightly broader than long ($W/L = 1.32$), very convex ($W/H = 1.46$); anterior margin slightly curved; lateral outline broadly rounded. Microreticulation absent; puncturation as that on head. Holotype: length 1.00 mm, width 1.32 mm, height 0.90 mm.



FIGS 40-44

Head of: 40, *Agathidium huaense* n.sp.; 41, *A. brunneipenne* n.sp.; 42, *A. inerme* n.sp.; 43, *A. lugubre* n.sp.; 44, *A. indubium* n.sp.

Elytra: Moderately narrower than pronotum, slightly longer than broad ($W/L = 0.96$), very convex ($W/H = 1.36$); lateral outline with very weak humeral angle. Microreticulation almost absent, only traceable; punctures as those on head. Holotype: length 1.25 mm, width 1.20 mm, height 0.88 mm.

Metathoracic wings absent. Meso- and metasternum: median carina weak, lateral lines absent, femoral lines incomplete; a small tubercle between the metacoxae. Metasternum very short.

Legs: Male hind femora broadened distally (fig. 46). Tarsal formula: ♂ 4-4-4, ♀ 4-4-4.

Male copulatory organ (figs 54-56): Aedeagus comparatively stout, with spiralled proximal part, lateral margins subparallel, apex broadly rounded, deeply bifid ventral piece. Parameres slender, gently narrowing towards apex.

Spermatheca (fig. 57): Basal part pear-shaped; apical part slender.

HOLOTYPE ♂: China, West Hubei, Shennongjia Nat. Res., 2000-2200 m, 3-8.VI.95, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 4 ♂ and 13 ♀ (MHNG), 3 ♂ and 3 ♀ (AC).

Discussion: See under *A. huaense* n.sp.

Distribution: China (West Hubei).

Agathidium (Agathidium) inerme n.sp.

Figs 42, 47, 58-60

Length 5.6-6.0 mm (holotype ♂: 5.95 mm). Dorsum black, venter reddish-brown, mesosternum lighter; antennae uniformly dark; legs reddish-brown. Microreticulation almost absent, traceable on elytra; puncturation fine on entire dorsum. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins not raised; clypeus moderately emarginate; clypeal line absent; eyes prominent (fig. 42). Antennal segment 3 2.3 times as long as 2 and longer than 4 and 5 combined. Hamann's organ: gutter with 2 vesicles in 9th and 10th antennal segments; gutter without vesicles in the 7th antennal segment. Microreticulation absent; punctures small, impressed, separated from each other by 2-4 times their diameter.

Pronotum: 1.48 times as broad as head, slightly broader than long ($W/L = 1.37$), very convex ($W/H = 1.41$); anterior margin sharply curved; lateral outline broadly rounded. Microreticulation absent; punctures smaller and less well impressed than on head, separated from each other by 4-6 times their diameter, some very small punctures interposed. Holotype: length 2.00 mm, width 2.75 mm, height 1.95 mm.

Elytra: Moderately narrower than pronotum, slightly longer than broad ($W/L = 0.95$), moderately convex ($W/H = 1.79$); lateral outline with very weak humeral angle. Microreticulation almost absent, only traceable; punctures as large as those on head, less well impressed, separated from each other by 3-8 times their diameter. Holotype: length 2.75 mm, width 2.60 mm, height 1.45 mm.

Metathoracic wings absent. Meso- and metasternum: median carina weak, lateral lines complete, femoral lines complete.

Legs: Male hind femora with pronounced distal tooth (fig. 47). Tarsal formula: ♂ 5-5-4, ♀ not known.

Male copulatory organ (figs 58-60): Aedeagus slender, with hook-like proximal part, lateral margins sinuate, apex truncate, deeply bifid ventral piece. Parameres slender, gently narrowing towards apex.

HOLOTYPE ♂: China, West Hubei, Shennongjia Nat. Res., 2000-2200 m, 3-8.VI.95, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 1 ♂ (AC).

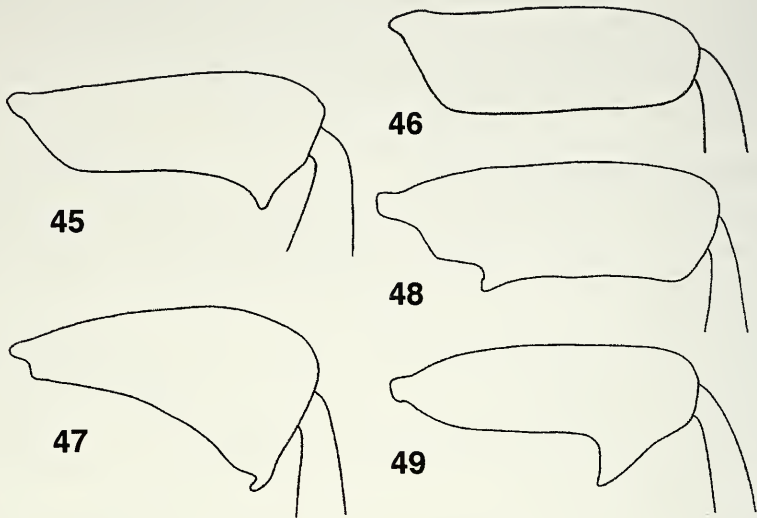
Discussion: *A. inerme* n.sp. is clearly different from all the Chinese *Agathidium* in its very large size and the ratio of the 3rd/2nd antennal segment.

Distribution: China (West Hubei).

Agathidium (Agathidium) lugubre n.sp.

Figs 43, 48, 61-64

Length 3.95 mm (holotype ♂ and paratype). Dorsum entirely black in the paratypes, reddish-brown at head in the holotype; mesosternum testaceous, meta-



FIGS 45-49

Male metafemora of: 45, *Agathidium huaense* n.sp.; 46, *A. brunneipenne* n.sp.; 47, *A. inerme* n.sp.; 48, *A. lugubre* n.sp.; 49, *A. indubium* n.sp.

sternum reddish-brown, abdomen black; antennae uniformly testaceous; legs reddish-brown. Microreticulation almost absent, only some traces on elytra; puncturation fine and sparse on head and pronotum. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins not raised; clypeus moderately emarginate; clypeal line absent; eyes prominent (fig. 43). Antennal segment 3 2.1 times as long as 2 and longer than 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Microreticulation absent; punctures small, superficial, separated from each other by 2-6 times their diameter.

Pronotum: 1.3 times as broad as head, slightly broader than long ($W/L = 1.38$), very convex ($W/H = 1.4$); anterior margin sharply curved; lateral outline broadly rounded. Puncturation as that on head. Holotype: length 1.32 mm, width 1.82 mm, height 1.30 mm.

Elytra: Slightly narrower than pronotum, as broad as long, moderately convex ($W/H = 1.7$); lateral outline with very weak humeral angle. Punctures as large as those on head, less clearly impressed, more superficial, difficult to see. Holotype: length 1.70 mm, width 1.70 mm, height 1.00 mm.

Metathoracic wings absent. Meso- and metasternum: median carina sharp, lateral lines absent, femoral lines complete.

Legs: Male hind femora with weak distal tooth (fig. 48). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 61-63): Aedeagus slender, with hook-like proximal part, lateral margins sinuate, apex truncate and slightly emarginate, deeply bifid ventral piece. Parameres slender, gently narrowing towards apex.

Spermatheca (fig. 64): Basal part globose; apical part slender.

HOLOTYPE ♂: China, Guangxi, 15 Km North Longsheng, 1000 m, 20.VI.95, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 1 ♂ and 3 ♀ (MHNG), 1 ♂ and 1 ♀ (AC).

Discussion: *Agathidium lugubre* n.sp. is closely related to *A. yunnanicum* Ang. & Švec and *A. indubium* n.sp. Its identification must be based on the male copulatory organ.

Distribution: China (West Hubei).

***Agathidium (Agathidium) indubium* n.sp.**

Figs 44, 49, 65-68

Length 3.7-4.0 mm (holotype ♂: 3.95 mm). Dorsum black, reddish-brown at head, venter reddish-brown, mesosternum lighter; antennae uniformly testaceous; legs reddish-brown. Microreticulation almost absent, traceable on elytra; puncturation fine and hardly distinct on entire dorsum. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins slightly raised; clypeus slightly emarginate; clypeal line absent; eyes prominent (fig. 44). Antennal segment 3 2 times as long as 2 and longer than 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Microreticulation absent; punctures very small, superficial, hardly visible, separated from each other by 4-10 times their diameter.

Pronotum: 1.4 times as broad as head, slightly broader than long ($W/L = 1.28$), very convex ($W/H = 1.38$); anterior margin slightly curved; lateral outline broadly rounded. Microreticulation absent; puncturation smaller and less well impressed than on head, hardly distinct, separated from each other by 5-15 times their diameter. Holotype: length 1.40 mm, width 1.80 mm, height 1.30 mm.

Elytra: As broad as pronotum, moderately broader than long ($W/L=1.09$), slightly convex ($W/H = 2.25$); lateral outline with very weak humeral angle. Microreticulation almost absent, only traceable; puncturation absent, except for some very small punctures. Holotype: length 1.65 mm, width 1.80 mm, height 0.80 mm.

Metathoracic wings absent. Meso- and metasternum: median carina short, lateral lines complete, femoral lines complete; a small tubercle between the metacoxae.

Legs: Male hind femora with sharp tooth at posterior margin (fig. 49). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 65-67): Aedeagus slender, with hook-like proximal part, lateral margins subparallel, apex deeply emarginate, bifid ventral piece. Parameres slender, gently narrowing towards apex and curved up.

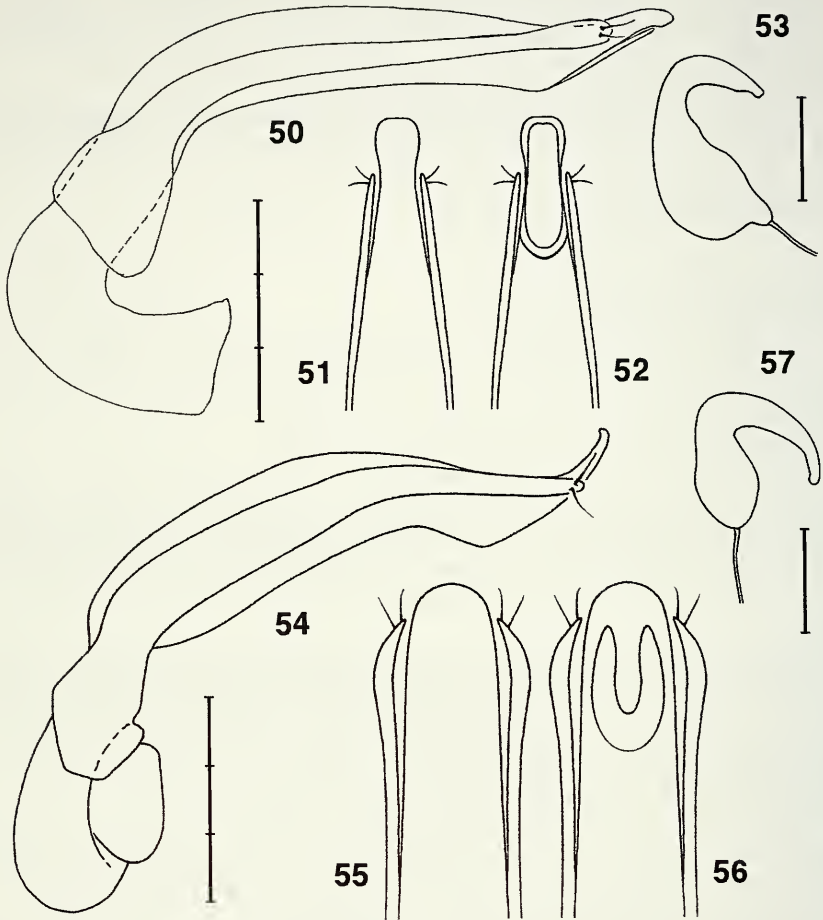
Spermatheca (fig. 68): Basal part globose; apical part short.

HOLOTYPE ♂: China, Sichuan, Mt. Emei, 1600 m, 28.IX.94, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 1 ♀ (AC).

Discussion: See under *A. lugubre* n.sp.

Distribution: China (Sichuan).



FIGS 50-57

Male copulatory organ (lateral view, dorsal and ventral view of apex) and spermatheca of: 50-53, *Agathidium huaense* n.sp.; 54-57, *A. brunneipenne* n.sp. Scale: 1 division = 0.1 mm.

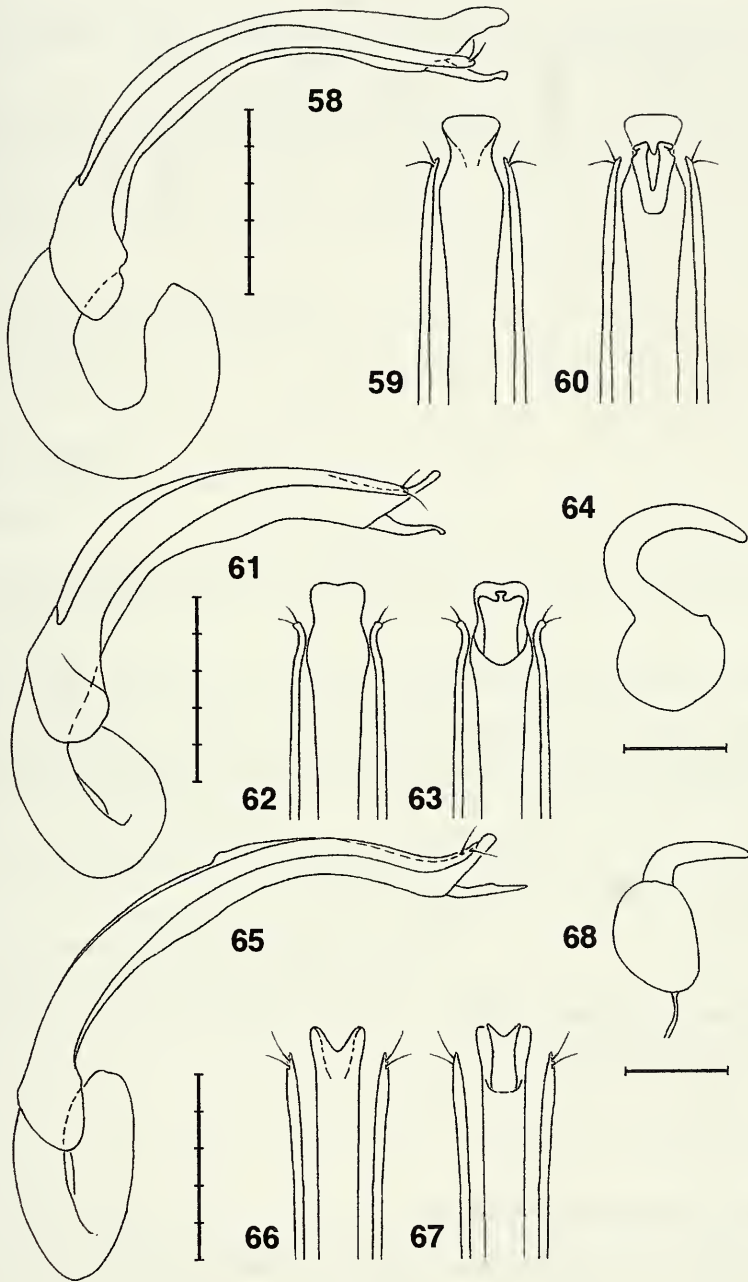
Subg. *Microceble* Angelini & De Marzo, 1986

grouvellei group

Agathidium (Microceble) corticinum n.sp.

Figs 69, 70, 73-76

Length 2.65-2.80 mm (holotype ♂: 2.65 mm). Dorsum reddish-brown, darker at elytra, venter reddish-brown, mesosternum lighter; antennae with segments 7-10



FIGS 58-68

Male copulatory organ (lateral view, dorsal and ventral view of apex) of: 58-60, *Agathidium inerme* n.sp.; 61-63, *A. lugubre* n.sp.; 65-67, *A. indubium* n.sp. Spermatheca of: 64, *A. lugubre* n.sp.; 68, *A. indubium* n.sp. Scale: 1 division = 0.1 mm.

darker; legs reddish-brown. Head striolate only on clypeus, pronotum with some traces of microreticulation; puncturation fine and sparse on head and pronotum. Sutural striae absent.

Head: Widest at eyes; anterior-lateral margins distinctly raised; clypeus slightly emarginate, with a short groove and a small pit at each side; eyes hemispherical (fig. 69). Antennal segment 3 1.2 times as long as 2 and as long as the 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Head striolate only on clypeus; punctures small, superficial, separated from each other by 4-6 times their diameter.

Pronotum: 1.73 times as broad as head, slightly broader than long ($W/L = 1.38$), very convex ($W/H = 1.47$); anterior margin slightly curved; lateral outline broadly rounded. Microreticulation almost absent, only traceable; punctures smaller and less well impressed than on head, separated from each other by 8-10 times their diameter. Holotype: length 0.90 mm, width 1.25 mm, height 0.85 mm.

Elytra: Slightly narrower than pronotum, longer than broad ($W/L = 0.98$), moderately convex ($W/H = 1.71$); lateral outline with very weak humeral angle. Microreticulation absent; puncturation absent, except for some very small punctures. Holotype: length 1.22 mm, width 1.20 mm, height 0.70 mm.

Metathoracic wings present. Meso- and metasternum: median carina weak, lateral lines absent, femoral lines incomplete; a pronounced tubercle between the metacoxae.

Legs: Male hind femora broadened distally (fig. 70). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 73-75): Aedeagus slender, with lateral margins gently converging towards a subacute tip, deeply bifid ventral piece. Parameres slender, gently narrowing towards apex.

Spermatheca (fig. 76): Basal part pear-shaped; apical part short.

HOLOTYPE ♂: China, South Yunnan, Mengyang Nat. Res., 9.IX.94, 500 m, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 1 ♀ (MHNG), 1 ♀ (AC).

Discussion: *A. corticinum* n.sp. does differs from the only other known Chinese species of the grouvellei group, *A. melanarium* Ang. & Švec, in the size, the microsculpture of head and pronotum, the colour of antennae and dorsum, the ratio of the 3rd/2nd antennal segment.

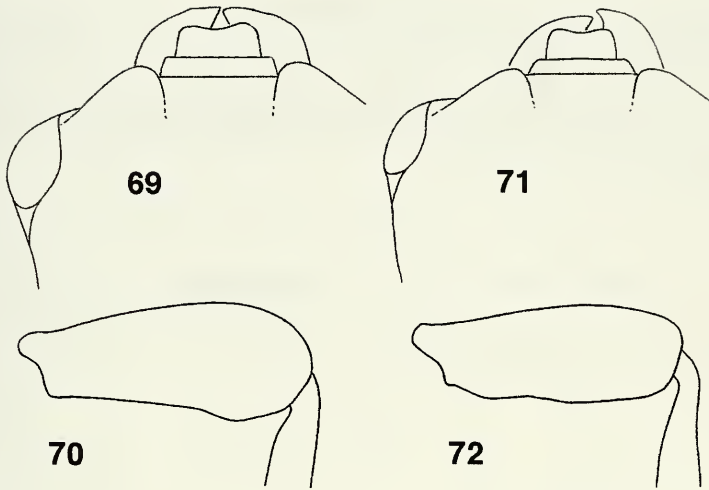
Distribution: China (South Yunnan).

andrewesi group

Agathidium (Microceble) solutum n.sp.

Figs 71, 72, 77-80

Length 2.6-2.8 mm (holotype ♂: 2.65 mm). Dorsum reddish-brown, venter reddish-brown, mesosternum lighter; antennae uniformly testaceous; legs reddish-brown. Microreticulation absent; puncturation fine and sparse on entire dorsum. Sutural striae absent.



Figs 69-72

Head and male metafemora of: 69-70, *Agathidium corticinum* n.sp.; 71-72, *A. solutum* n.sp.

Head: Widest at eyes; anterior-lateral margins distinctly raised; clypeus slightly emarginate, with a short groove and a small pit at each side; eyes hemispherical (fig. 71). Antennal segment 3 1.3 times as long as 2 and as long as the 4 and 5 combined. Hamann's organ: gutter without vesicles in 9th and 10th antennal segments. Microreticulation absent; punctures small, superficial, separated from each other by 3-6 times their diameter.

Pronotum: 1.65 times as broad as head, slightly broader than long ($W/L = 1.28$), very convex ($W/H = 1.31$); anterior margin sharply curved; lateral outline broadly rounded. Microreticulation absent; puncturation as that on head. Holotype: length 0.90 mm, width 1.16 mm, height 0.88 mm.

Elytra: Slightly narrower than pronotum, moderately longer than broad ($W/L = 0.91$), moderately convex ($W/H = 1.57$); lateral outline with very weak humeral angle. Microreticulation absent; puncturation as that on head. Holotype: length 1.20 mm, width 1.10 mm, height 0.70 mm.

Metathoracic wings absent. Meso- and metasternum: median carina weak, lateral lines absent, femoral lines incomplete; a pronounced tubercle between the metacoxae.

Legs: Male hind femora simple (fig. 72). Tarsal formula: ♂ 5-5-4, ♀ 5-4-4.

Male copulatory organ (figs 77-79): Aedeagus stout, with twisted proximal part, lateral margins sinuate and converging towards a broadly rounded apex, deeply bifid ventral piece. Parameres slender, moderately enlarged at apex.

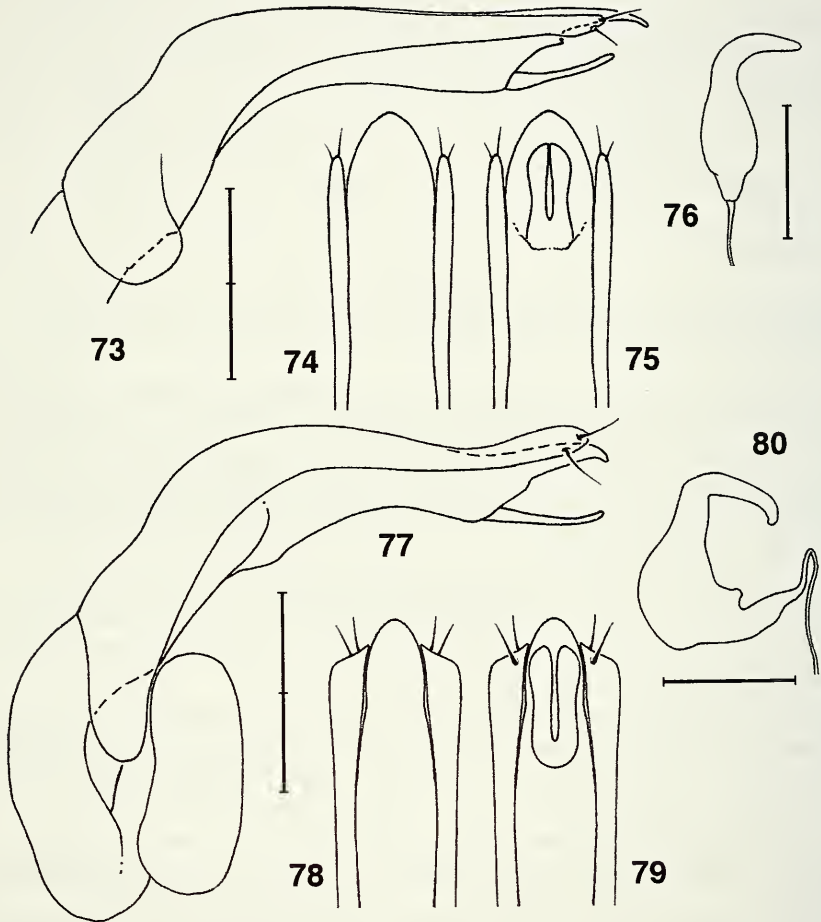
Spermatheca (fig. 80): Basal part pear-shaped, prolonged towards the duct connection; apical part short.

HOLOTYPE ♂: China, Guangxi, 15 Km North Longsheng, 1000 m, 20.VI.95, leg. S. Kurbatov (MHNG).

PARATYPES: as holotype, 1 ♀ (AC); same but 21.VI.95, 1 ♂ (AC); same but 15-22.VI.95, 3 ♀ (MHNG), 1 ♂ (AC).

Discussion: In China, the andrewesi group includes a total of 3 species, which can be distinguished from each other only on the basis of the male copulatory organ.

Distribution: China (Guangxi).



Figs 73-80

Male copulatory organ (lateral view, dorsal and ventral view of apex) and spermatheca of: 73-76. *Agathidium corticinum* n.sp.; 77-80. *A. solutum* n.sp. Scale: 1 division = 0.1 mm.

Agathidium (Microceble) venustum Ang. & Dmz.

Agathidium (Microceble) venustum Angelini & De Marzo, 1995: 250.

M a t e r i a l: China, Guangxi, 15 Km North Longsheng, 1000 m, 22.VI.95, leg. S. Kurbatov, 3 exx. (MHNG), 2 exx. (AC).

Distribution: China (Guangxi), Taiwan. New record for China.

Agathidium (Microceble) manasicum Ang. & Dmz.

Agathidium (Microceble) manasicum Angelini & De Marzo, 1986: 445; ANGELINI, 1992: 209.

M a t e r i a l: China, Guangxi, 15 Km North Longsheng, 1000 m, 22.VI.95, leg. S. Kurbatov, 2 exx. (MHNG), 1 exx. (AC).

Distribution: China (Guangxi), Thailand, India (Assam). New record for China.

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